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ABSTRACT

This paper delves into the concepts of individualized instruction at the elementary school level. Following an explanation of individualized instruction, the paper presents two differing points of view concerning how provisions can be made to individualize instruction: a) the patterned approach, which emphasizes the logical sequence involved in teaching a subject, and b) the unpatterned approach, which rejects the idea of the above. The vertical and horizontal organization of the school is then discussed in relation to graded and nongraded schools and to general ability and multi-age grouping of students. Individual differences found in the classroom are treated, as are provisions for dealing with these differences. Various uses of individualized instruction in the subjects of reading, social studies, and science are noted. A 15-item bibliography is included. (For related documents, see SP 006 949-953.) (BRB)

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INDIVIDUALIZATION OF INSTRUCTION:

THE ELEMENTARY SCHOOL

by

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Introduction

Man is a product of his heredity and his environment. Because of hereditary factors transmitted through the genes, each man is more like his fellow men than he is like other primates. Yet each man is not like every other man nor is he exactly like any other man. There are differences which are determined at the moment of conception, differences which are then molded, shaped and accentuated by the environment. These are differences for which we should be thankful. Certainly one of the characteristics that makes man man is his infinite tendency toward variety. Not only are there differences in color, in body build, in visual acuity, and in other physical features, all of which when added together really add up to very little, but there are also differences in the ability to think thoughts and to react differently in similar situations. These are differences of a major character because man himself, in the process of acting and behaving, affects his own destiny. Because man can think, man differs.

Man is a product of himself just as much as he is a product of his heredity and his environment. He has a will and he has the capacity to reason. He acts and though the acts may be forced upon him by needs and drives somewhat beyond his control, as when some primal urge moves him in to search for a mate, his eventual choice will be determined by those characteristics which, his reason tells him, he prefers in a partner.

Therefore, heredity, environment, and man himself, or at least his conception of himself, all combine forces to make him different from his fellows.

It is really these differences we should be concerned with as teachers even though we often try to act as though they did not exist. Aside from their common humanness, about the only other thing two children born on the same day at the same time have in common is their birthdate. Nevertheless, we group pupils in school on the basis of their chronological age and then attempt to treat them as though they were alike in all other respects as well.

Individualized Instruction

If there are any two topics about which more has been written and less done, they are the two related topics of individual differences and individualization of instruction. We have much data on the extent of differences. Pupils differ in their capacity to learn and in the rate at which they learn. Cook[1] has shown that the range of mental age scores of a group of entering first grade pupils will be from 4 years MA to 8 years MA, if the upper 2% and the lower 2% are excluded. Including those at the extremes would make the range even greater. By the time these pupils enter the seventh grade the range for this "middle" 96% will have increased and the range will be from 8 years MA to 16 years MA. Thus, the need to provide a varied program becomes greater as pupils proceed through school. Good teaching should increase the range of achievement in a class. It should not decrease it!

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[1]Cook, Walter C., "The Gifted and Retarded in Historical Perspective," Phi Delta Kappan, 39:250, March, 1958.

A second grade teacher will strive to make sure that all of the pupils in her room complete the second grade reading program by the time the school year ends in June. If they do not, she may regard herself as having failed or, worse yet, blame the pupils and label them as failures by retaining them in the second grade another year. Such an attitude evidently is based upon the belief that it is both desirable and possible for all children to arrive at approximately the same level of achievement after a period of instruction. Instead of searching for methods whereby individual pupils can be taught differently, such a teacher apparently believes that it is possible to find a method whereby it would be possible for all children to learn about the same amount and at the same rate. The preponderance of evidence suggests that what she wants is not desirable even if it were possible. Only poor and inadequate methods result in uniform rates of achievement. If the pupils all do complete the program in second-grade reading during the year, one of two conditions may have prevailed during that year. It may be that the program is so easy that even the slow pupils cannot help but complete the program satisfactorily. But, if this is the case, then the average and bright pupils must have been bored to death. They could have gone on to much more difficult materials at a third or fourth grade level of difficulty. If they were not permitted to do so, the teacher and the program have failed. On the other hand, the materials may have been more difficult and the teacher may have devoted so much time and effort to the slower learning pupils in the class, in order to bring them to grade level, that she neglected those at the upper end of the scale. Again, those bright children could have

gone much farther but since the teacher's efforts were directed toward bringing the slower learners up to grade level she had no time left to take the bright beyond grade level.

Yet, paradoxically, it is the primary teachers who usually do the best job of providing for differences. More sub-grouping within the class, especially in reading, is found in the primary grades than elsewhere. Primary teachers provide more time for individual help and in general seem to be more concerned with individual pupil needs. As the pupils move into the intermediate grades and the range of differences becomes greater, fewer and fewer provisions are made for these differences. Teachers are more apt to use a single-textbook approach although it is inevitable that the text will be too difficult for some and will be lacking in challenge for others. Even in those intermediate grade classrooms in which teachers may be using small groups for the developmental reading program, they will often continue to use a single text in science or social studies. It would seem obvious that if it is good practice to group pupils for reading, it is a mistake to have them all use the same text for social studies.

Teachers do, of course, recognize the inability of many pupils to read the material in the text but often resort to such ineffective techniques as oral reading in which pupils take turns reading aloud the material from the text. The assumption is that the poorer readers will at least gain something from hearing the material read and may thus be encouraged to participate in class discussion following the reading. The trouble is that this procedure reduces the assignment

to the level of the lowest common denominator in the class and kills the interest of both the bright students and the slower learners. In addition, such a procedure leaves little room for the development of process and inquiry skills nor do the pupils have the opportunity to develop research and language skills in a meaningful way. What is needed, of course, is a large variety of materials of different levels of difficulty. A school would be well advised, if it is the desire to provide for individual differences, to take the money that would be spent for workbooks in the social studies, for example, and use this money to add books to the school or classroom library.

Many, perhaps most, of the changes and suggestions for change in elementary school organization, curriculum and teaching methods have had individualization of instruction as their focal point. Some recent (and some not so recent) proposals have been general ability grouping, departmentalization, the dual progress school, the nongraded school, team teaching, flexible scheduling, unit teaching, programmed instruction, process approaches, inquiry teaching, individually prescribed instruction, multiage grouping, individualized reading, computerized instruction, and the list could go on and on. The viewpoints represented by these terms are by no means identical and in some instances are quite diverse as, for example, general ability grouping and multiage grouping. If all were placed in some vast curriculum hopper and shaken down in an effort to screen out the differences and arrive at common characteristics, it would probably be found that the only sieve that all would go through would be one labeled "attempts to provide for individualized differences."

As can be seen, many of those listed do not represent particularly new ideas. Many can be used in the graded school or in a self-contained classroom just as well as they can be used in newer organizational plans. Some do represent radical departures from tradition. The nongraded school is an example of one such break with the past.

Patterned and Unpatterned Approaches

It is possible for purposes of discussion to identify two differing points of view concerning how provisions can best be made to individualize instruction in the elementary school. We might call one approach patterned and the other unpatterned. In actual practice, teaching methods seldom fall into one category to the exclusion of the other, but procedures used in a school may lie someplace in between and may exhibit characteristics of both.

The Patterned Approach

Those who advocate the patterned approach emphasize that there is a logical, inherent, predetermined sequence within a subject. They believe that it is necessary first of all to determine objectives for the curriculum in terms of subject matter, to identify basic concepts in some logical order, to state the objectives in behavioral terms and then make some determination as to how instruction may be individualized within this ordered sequence. Such a procedure usually involves considerable testing to diagnose where a child stands in relation to the curriculum that is to be taught. Once this is known, the teacher may make assignments or develop prescriptions appropriate to each pupil and move each through the curriculum at his own rate.

The common developmental reading program centering in a series of basal texts and associated materials is an example of an early attempt to utilize this approach. Reading skills were identified and ordered from those that were supposedly simple to the higher level more complex skills. The program was then superimposed on the existing age-graded school and certain skills became associated with work for different grade levels. Educators and teachers, who recognized that children differed in background, personality, and learning rate, attempted to devise ways of moving children through the program at different rates. The usual practice was, and still is, the use of three subgroups within the classroom composed of those who could move rapidly through the work for a grade, those who could not move quite so fast, and those who could only move slowly. The program became so associated with grade level standards, however, that these attempts at individualization were herky-jerky in nature at best and a fraud at worst. Even though attempts were made to teach pupils according to their reading ability within a grade, each grade seemed to be regarded as an entity of its own having little or no relationship to grades before or after. If pupils in the slower moving subgroups did not meet end-of-year grade level standards, they could be retained and doomed to go through the same material a second year

To overcome the inadequacies of such a system, attempts have been made to organize the reading program around smaller groupings of skills, called levels. The total reading program in an elementary school may be divided into fifteen or twenty levels, and pupils move from one level

to another as they finish the work in one and become ready for the next. If a pupil is moved through the levels at his own pace, and each teacher takes each child at the level she finds him at the beginning of the school year and permits him to move from that point, then the level concept can make a contribution to the individualization of instruction. As such, the notion of levels has been used extensively in nongraded schools, but it may add little to the program in a graded school if retention in grade continues to be practiced in the school.

As they are usually found within the school, the reading program organized around a series of basal readers and the reading program organized around a series of levels are both examples of a sequenced or patterned curriculum developed along subject matter lines. The program is "individualized" by moving pupils through it at different rates.

Other examples of patterned approaches would be some nongraded schools that place considerable emphasis upon levels, individually prescribed instruction, most departmentalized schools, and schools that use general ability grouping.

The Unpatterned Approach

The second, or unpatterned approach rejects the idea that learning proceeds in an even, orderly step-by-step process. Furthermore, this approach takes the position that it is foolish to assume that any particular arrangement of steps or levels is appropriate for all children, even if an attempt is made to vary the rate of progress

through the steps. It is assumed that the sequence and pattern of learning are in the child, not in the subject, and that the interests of the pupil should be used in determining what should be taught. The unpatterned approach often emphasizes self-reflection and self-actualization on the part of the pupils. It is the responsibility of the teacher to provide a stimulating environment, to provide a variety of materials, to guide the children, and help them learn how to plan, make decisions, and evaluate. The teacher should be a skillful questioner. He should help pupils clarify purposes and state problems well.

It is the teacher's role to encourage self-direction and independence on the part of each learner. The pupils should learn to take over more and more responsibility for their own learning and pursue more their own individual interests. The teacher will hold conferences with individuals and small groups and there will be occasions when the entire class will meet as a group, but there will be much independent study and small group work with the teacher moving from pupil to pupil.

Entirely consistent with this approach is the notion that part and parcel of individualization of instruction is helping children learn to think for themselves. The more the teacher can do to stimulate the child's natural curiosity and to encourage independent thinking, the more capable all pupils will become at working out solutions for themselves. Isn't this what individualization of instruction is about after all?

Most schooling tends to stifle the vital, internal curiosity that is natural in children. In order to learn, we demand that they conform. Instead of encouraging individual initiative, school curricula, especially the patterned structured programs, tend to try to fit every child to the same pattern. We are not really providing for individual differences if all we do is vary the rate at which children move through a constant curriculum.

John Holt asks what happens to the extraordinary capacity for learning and intellectual growth that the pre-school possesses and then answers his own questions.

> "What happens is that it is destroyed, and more than by any other one thing, by the process that we misname education - a process that goes on in most homes and schools. We adults destroy most of the intellectual and creative capacity of children by the things we do to them or make them do. We destroy this capacity above all by making them afraid, afraid of not doing what other people want, of not pleasing, of making mistakes, of failing, of being wrong."[2]

Later on he adds:

> "It is not subject matter that makes some learning more valuable that others but the spirit in which the work is done. If a child is doing the kind of learning that most children do in school, when they learn at all-swallowing words, to spit back to the teacher on demand - he is wasting his time, or rather we are wasting it for him. This learning will not be permanent, or relevant, or useful. But a child who is learning naturally, following his curiosity where it leads him, adding to his mental mode of reality whatever he needs and can find a place for, and rejecting without fear or guilt what he does not need, is growing - in knowledge, in the love of learning and in the ability to learn."[3]

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[2]Holt, John, How Children Fail, New York: Pitman Publishing Corporation, 1964, p. 167.

[3]Ibid, p. 178.

The ideas of John Holt are much closer to the unpatterned approach to individualizing instruction than they are to the patterned. Another concept that is close to this approach is multiage grouping.

It is possible to develop a curriculum that is more structured in some subject areas than in others. It is not at all unusual to find that the reading and mathematical programs are highly organized with the skills in these subjects presented in a definite order. On the other hand, the social studies program may be organized much more loosely with the pupils given many more opportunities to engage in planning and the content may be based much more up on the expressed interests of the children.

Within the field of reading some approaches may be more highly organized than others but all tend to have some degree of order, and all pupils go through the same program but at different rates. Witness the emphasis placed upon concepts of "developmental reading" and "readiness" in most reading programs. The first term assumes that all growing children pass through stages in their physical, mental, emotional, and social growth and that the various skills in reading can be ordered and related to this "normative" growth pattern. The second term assumes that children will not go through these stages at the same time or at the same rate and that it is necessary for the teacher to identify the degree to which each pupil is "ready" for the skills that are associated with a particular stage of development. The teacher should pace the child's progress through the program at a rate that is commensurate with his ability or his readiness to profit from the program.

An example of a more highly structured and organized program would be a program developed with a basal reading series as a core. Such a program may tend to be more inflexible and make fewer provisions for individual differences than does the "experience reading" program.

Pupils enter, pass through, and graduate from schools. The organization of the school to facilitate the passage of children through it is referred to as the vertical organization of the school. Several plans for the vertical organization of the elementary school have been developed. The two most common are the graded school and the nongraded school. At any given instant in time pupils will be distributed throughout the school within the various teaching stations of the school. This is the horizontal organization of the school.

Any discussion of individualization of instruction will include description of some topics that refer to the vertical organization of the entire school and some topics that refer to what goes on in classrooms with particular groups of children.

Vertical Organization and Individualization of Instruction

The traditional plan for the vertical organization of the elementary school has been and still is the graded school. Advantages of this plan of organization are:

1. It is traditional and therefore understood and accepted by the public and by teachers.
2. Most of the materials of instruction that have been developed to date have been developed with the age-grade structure of the school in mind. Thus we have graded textbooks, graded courses of study, and so on.

Disadvantages of the graded school:

1. The graded standards that have developed over the years have tended to become the objectives that all pupils have been expected to achieve.

2. Teachers have tended to teach for the "average" pupil within each grade and programs have been too difficult for the slow learners and lacking in challenge for the bright. Individual differences among learners often have not been provided for.

3. Pressures on all pupils to reach what are inevitably impossible goals for some have resulted in alienation, disinterest, school dropouts, or emotional upset.

As more and more information was brought forth concerning the growth and development of children and as more and more was discovered about how human beings learn, there developed at the same time a feeling that the age-graded elementary school with its self-contained classrooms was not the best vehicle to be used to facilitate learning. Several practices developed in the graded school that were inimical to the idea of individualized instruction. One of these was an overemphasis on rigid standards per grade coupled with the use of marks as incentives to get pupils to achieve. Another, often resulting when the standards were not met, was nonpromotion or retention in grade for a second year. Thus schools tended to set up a situation that was intolerable and could only result in alienation or emotional upset. When impossible goals are established and at the same time strong motivation is provided to reach these goals, the result can only be stress, strain, and anxiety.

Antoine de Saint Exupery has stated the case in Flight to Arras.

> "Here is a runner engaged in the race of life against other runners of his own class. The starter fires, the runner springs forward - and he discovers that he has a ball and chain attached to his leg.

He quits.
'The race doesn't count,' he says.
'It does though, it does!' you protest.
. . .What are you going to tell a man to make him put his heart into a race that is not a race?

The Nongraded Elementary School

One answer to the criticisms of the graded school was the nongraded school. A separate monograph in this series is devoted to the nongraded or continuous progress schools, therefore, they will not be described here.

A point that should be emphasized is that it is not nearly as much the form of school organization as it is the spirit of the teacher that counts. It is probably true that the nongraded school organization does make it easier for a teacher to provide an educational program more suited to the needs of individual pupils. Nevertheless, a teacher who believes wholeheartedly in the necessity for teaching different children differently can and will make such provisions even though he is teaching in a self-contained classroom in a graded structure, and he may be more successful than his brother teacher who thinks more traditionally even though the latter finds himself teaching in a nongraded school. Indeed, the self-contained classroom can be used in many ways to facilitate good teaching and can be adapted to the nongraded school as well as the graded school. One advantage of the self-contained classroom is the possibility for flexibility in scheduling. A single teacher working with the same group of pupils can organize the program in about any way he sees fit. If he wishes to spend more time for social studies today he may do so and make up

the time taken from arithmetic tomorrow, if such would be appropriate. If he wishes to spend the entire morning with the class on a field trip, plans can be made without disrupting the schedules of other teachers and pupils.

A second advantage of the self-contained classroom that is sometimes neglected in other types of school or classroom organization is the opportunity provided for the integrated teaching of language skills with the other school subjects. The ability to use the English language with facility is not developed by endless drill on its punctuation, its conventions, or its syntax. Proficiency in expressing ideas well in either spoken or written mode comes as a result of practice in doing just that in a context that is important or that has meaning for the pupil. Such context can be found in science, social studies, reading or other content areas. To attempt to teach language skills apart from such context can only result in inadequate development of the skills. The teacher in the self-contained classroom has many opportunities to teach language skills in context. Pupils can make up individual spelling lists based upon words they have misspelled in written work in other subjects and the teacher can be aware of their needs in spelling based upon his observation of their work. In the same fashion language exercises can be based upon observed weaknesses rather than upon a sequence in a languare arts textbook that pupils are put through whether they need it or not.

Individually Prescribed Instruction

Not all programs fit nicely into either a vertical or horizontal category. Individually Prescribed Instruction (I P I) is one of these. Essentially, it is a plan whereby instruction may be completely individualized in four subject areas: reading, science, spelling, and mathematics. Other subjects are presently taught in traditional ways although plans are being developed to apply I P I to other subjects. An individualized program suited to each pupil's instructional needs is planned and implemented in each of the four areas. All of the pupils may be working at different levels in any one subject, and any particular pupil may be working at a different level in one subject than he is in another. Pupils move through the programs at their own rates.

In developing I P I programs, it was necessary to develop a carefully sequenced and detailed listing of objectives for each subject. These objectives were stated in behavioral terms. Within various sequences or topics subsequences of related objectives were placed together in units.

Testing is a vital part of the I P I program. Placement tests at the beginning of the year indicate each student's position in each subject and indicate the unit at which he should start. A unit pre-test is given to locate his particular needs within the unit. On the basis of the diagnostic pre-test the teacher begins to write individual prescriptions for each student. These include procedures he is to follow and materials he might use. The final exercise in each prescription is called a curriculum embedded test, over what he has

completed. If he completes this satisfactorily he may proceed to the next prescription covering the next skill. A post-test is given at the end of each unit. If the student passes he may proceed to the next unit. If he does not he is given additional prescriptions in the old unit until he can pass the post-test with a score of 85%.

The writing of daily prescriptions for each pupil is the heart of the teacher's role in an I P I program. To do this teachers have the assistance of computers and teacher aides. Computers are used to collect, analyze, and feedback data. Such a retrieval system places at the teacher's fingertips a full record of each pupil and makes the job of prescription writing easier.

I P I utilizes materials that have been developed specifically for the program, but it also utilizes any commercial materials available that can be used to help pupils attain the curriculum objectives. It is important for the program that a variety of materials be readily available for use in writing and carrying out individual prescriptions. The program makes use of a variety of media--teacher prepared worksheets, textbooks and library materials, listening centers with tapes and headsets, 8 mm cartridge films, filmstrips, or any and all available teaching materials.

Pupils may be grouped for instruction or assistance if they have similar needs. The teacher may assemble small or large

groups to present new ideas and processes. The groups come together for the short term only and when the purpose for which the group has been called together has been accomplished the group ceases to function.

Advantages:

1. I P I appears to be the closest to a truly individualized program of the patterned type for group instruction that has yet been developed.

2. Teachers must be aware of the needs of individual pupils in order to write the best pupil prescriptions. Teachers must accept each child where he is.

3. The program appears to permit schools and teachers to function more nearly in accordance with principles of child development and learning than do other programs.

Disadvantages:

1. The program is expensive. It has been estimated that I P I costs from $37.00 to $115.00 more per pupil, depending upon the quality of education already offered in a school.

2. It appears to meet the needs of bright children somewhat better than it meets the needs of the slower learner.

3. In order to adequately carry out the function of developing individual prescriptions, access to a computer is apparently necessary.

4. Some retraining of teachers to work in the program will be necessary.

Horizontal Organization and Individualization of Instruction

In order to provide for individual differences it is best to try to group pupils of like ability together, or should pupils who are quite different in interest and ability be placed in the same classroom? Can the individual needs of pupils best be met

in classes that are grouped homogeneously or in classes in which heterogeneous grouping is practiced? There is no clear-cut answer. The approach that a teacher may wish to use will be based more upon his values and his philosophy than upon any hard evidence as to which approach will yield the best results. School and classroom practice will be found to vary from general ability grouping on the basis of intelligence test results, on the one hand, with those pupils at the upper end of the IQ score range in one room and those at the lower end in another room, to multiage grouping with pupils whose chronological ages differ as much as three or four years placed in the same room.

Educators who use general ability grouping assume that there is a positive and fairly high correlation among traits and abilities and that a pupil who does well in reading is quite likely to have the aptitude to do well in mathematics as well as in other subject areas. Therefore, they feel there is justification in placing pupils of like abilities in the same room in order that the teacher may be better able to develop a program that will be more suited to their individual needs. These educators would argue that the most practical way to individualize instruction is to place pupils together who are alike in ability.

Those who believe ability grouping is the path to individualizing instruction see this primarily as a convenience for the teacher. The teacher needs to have a group of pupils who are as nearly alike in ability as possible in order that all may be doing the same or similar things.

This does not mean that the program will be identical for all. A class of bright pupils may engage in a variety of science projects, for example. The entire class may also be working in more difficult materials in reading but each child may be reading books along his own line of interest. Social studies projects may be an important part of the curriculum and committees may be at work in unit activities. What is different is that segregation is practiced, not on the basis of race or color, not on the basis of sex, but segregation by reason of intelligence.

At the other extreme, multiage grouping is also justified by its proponents as the best plan to develop the individuality of pupils. They argue that if a teacher really wants to individualize instruction a multiage group with its broad range of abilities is the best plan of organization within which to do so. The teacher can utilize the variety of interests and skills to provide a broad spectrum of activities within the classroom. Pupils can learn to plan with one another. They can learn from, with, and about one another. They can attack a topic from many angles. There can be a variety of materials and a variety of projects. The sequence and pattern of learning is in the child rather than in the subject matter. According to this view it is not possible to predetermine a sequence that would be appropriate for all learners. Grouping pupils by ability or according to achievement levels is contrary to the idea that the individual should be prized for his uniqueness. What is necessary is to

help each child learn how to develop his individual talents to the fullest. To do this he will need to develop certain skills, but he will also need to learn how to plan and evaluate and to learn how to attack problems and make decisions.

While it is possible to use either general ability grouping or to practice heterogeneous grouping in a multiage class, it is more common to find teachers using heterogeneous grouping. The teachers who believe in multiage grouping also tend to believe in a non-patterned program and that pupils of different levels of intelligence can learn from one another. They usually believe that in a pluralistic, democratic society it is vitally important that people who have different abilities and interests come to respect, understand, and appreciate the differences of others. They believe that such understanding will not come if pupils are segregated in different classes on the basis of intelligence.

Providing for Individual Differences in the Classroom

The ability of the learner tends to be related to particular subject areas. That is, one pupil may learn rapidly in reading but that same student may learn mathematics more slowly because of lower mathematical aptitude; therefore, adaptation of teaching methods and materials needs to be made for individual pupils within different subjects. Children learn best in an atmosphere in which they can be active thinkers and doers. Learning is never a passive, receptive act; it involves the students in discussions, projects, and other activities.

Pupils in the classroom will engage in a wide variety of activities; planning and discussion, using audio-visual materials, reading, arranging exhibits, writing letters and reports, constructing plays, singing, working with maps, finding information in reference materials, playing indoor games, working with programmed materials, painting or using other art media, engaging in science experiments and demonstrations. Flexibility of equipment and space will be needed so that students work individually, in small groups, and in large groups.

Since pupils differ in their rates of learning, all of the materials will not be used by all of the pupils at the same time but will be used by different pupils at different times. This in turn means that many different materials will be in use at the same time by individual pupils or by pupils working in small groups.

Primary grade pupils are not particularly conscious of subject matter designations nor is there any need that they should be. Children bring to the classroom three resources that are characteristic of their growth and development. These resources are curiosity, energy, and play.[4] These are resources that should be utilized to facilitate learning. It is the wise teacher who

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[4] Morse, William C. and G. Max Wingo, Psychology and Teaching, third edition, 1969, pp. 120-128.

takes advantage of the natural curiosity of pupils, who realizes that energy is something to be creatively channeled into proper avenues for learning, who uses play activities as an educational technique.

Primary pupils are not aware, necessarily, whether an activity is a science lesson, a social studies lesson, or a lesson in reading or arithmetic. If properly handled, the activities in which they engage should be interesting and exciting to them precisely because they are learning something that is important to them at the moment.

For example, first graders are bothered by an overabundance of green algae in their aquarium. They discuss why this is occurring, look at books that tell them about aquariums, ask at home, or consult someone in the community who might be able to help them. They learn that too much direct sunlight will promote the growth of algae, and they come to the conclusion that the tank should be cleaned and moved to another location in the classroom. This initial problem may lead to further study of how the aquarium can be kept in balance and to a study of the kinds of plants and animals that will accomplish this.

Most activities in the primary grades bring together in an integrated program concepts from many areas. The pupils may not be aware of the longer term objectives, but the teacher is very much aware. She realizes that it is important that the

pupils develop reading, writing, and speaking skills; but she also realizes that these skills are not developed apart from some content. Language skills, as a prime example, do not have "content". We don't speak "speaking" or write "writing" or read "reading" but when we speak or write or read, we must speak or write or read about something. Therefore these skills must be developed around some content, whether the content be trivial or profound. Since it would seem to make sense that the content should be more profound than trivial, most teachers attempt to develop the language skills around activities in subject areas that do have content such as science, social studies, health, or literature. It is important that science and social studies concepts be introduced in the primary and intermediate grades for their own sake. However, it is also important that they are taught at this level because they provide an essential vehicle for the adequate development of the language skills.

One more example may be given. A group of second grade pupils is engaged in a study of "The Dairy." Many youngsters may already have some rudimentary knowledge of the source and production of milk. They may have some knowledge of a dairy farm, but they will know very little about the production and distribution of such a perishable commodity. In the course of such a study, a trip to a dairy farm may be in order. Pupils may examine maps to see where important dairy-producing regions are located. They may even construct crude maps of the local community to locate

milk processing plants, dairy farms, and retail stores. They may learn about the various kinds of milk products and ways of processing milk--whole, powdered, skim, half and half, ice cream, cheese, etc. They begin to understand pasteurization and the health values of milk and a balanced diet. They may learn that other animals are used to produce milk in some other countries and locate these places on a globe. They may learn of a whole host of occupations associated with milk production and distribution.

In the course of this study, they will have had many occasions to examine books to learn more about milk. They will have done research, written letters thanking farmers or dairy owners for the opportunity to visit, developed charts, pictures, booklets, and maps. They will have viewed films and filmstrips or listened to tapes or recordings.

Reading

Much of the reading program and many reading skills will be developed in a functional program. However, it is still necessary to have a formal program of developmental reading skills.

The traditional approach has been to organize small groups within the class. Pupils are assigned to these groups according to an appraisal of their general reading ability. Consequently, students who are achieving at one level will be assigned to one group, those pupils who are achieving at another level to another group and so on. While the teacher is working with one

group, the rest of the class will be working on other things. They might be working at individual study carrels using programmed reading materials or engaged in library reading in the reading center. Another small group could conceivably be working on science or social studies projects at some other place in the room.

The small group approach to reading has been widely used. Usually one or more basal readers are an integral part of such a program. Different groups proceed through the readers at different rates.

Such an approach is an attempt to provide for individual differences, but it has certain limitations. In its best form, the grouping is flexible. A child may be assigned to a group, not as a permanent assignment, but on the basis on his needs. If he lacks phonic skills, he may temporarily join the group that is working on these skills. If, however, he excels in his reading achievement, he may be changed to a different group which reads more rapidly.

However, teachers do not always use achievement groups as they should be used. When they are poorly used, achievement groups fail to make adequate provision for individual differences. A limitation is the tendency for these groups to become permanent. Consequently, the child remains in the group regardless of his emerging abilities. A second limitation of achievement grouping is the tendency not to permit pupils to go beyond the grade

level in reading. All pupils in a third grade are confined to a third grade reader. The spread of ability in most classrooms is not confined to one year, but usually extends to a spread of four years and beyond. If individual differences are really being taken care of some pupils will be far beyond the grade reader into more difficult materials, while others will be concentrating on simpler skills which they have not mastered.

As John Goodlad and Robert Anderson put it:

> To expect two children, who begin their school careers several years apart in readiness, to be at the same place several years hence is to do an injustice to both.[5]

The ultimate purpose of any reading program should be to encourage pupils to read. It is not enough to teach pupils how to read, we must also get them to read. A reading program that develops skill in reading is only half a program if the pupils have nothing to read or have no interest in books. Students must have an opportunity to experience the joy and excitement that can come from reading. In large part, this opportunity comes through the functional reading done in science, social studies, literature, etc. There must also be the additional opportunity for free or recreational reading. A school should have an instructional materials center at the heart of its instructional program. Each classroom, however, should provide some space for a bright, inviting reading center or library corner with displays of books and a place to sit and read them.

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5. Goodlad, John I., and Robert H. Anderson, The Nongraded Elementary School.

Social Studies

Much that applies to social studies, science, and other subject areas has already been described. In the elementary school much "reading" is taught in the social studies, and concomitantly social studies is used to develop reading skill. The same could be said of language arts or communication skills. Language skills in the past have been taught many times in a rote, mechanistic fashion apart from any real content and devoid of any real purpose as far as the learners were concerned.

A program that is concerned with individual development within the social studies program cannot be limited to assignments in a single basic textbook. A range of abilities will exist within a classroom. Some pupils will not be able to read the text successfully. Some will find it lacking in challenge. If we wish pupils to develop research skills and think critically about problems, they must be brought into contact with a wide variety of materials and ideas. They must learn to compare, contrast, and evaluate ideas.

Pupils learn by becoming intimately involved in topics and problems that are of concern to them. They learn through inductive procedures of discovery and inquiry under the guidance of the teacher. Too much of our education has consisted of imposing concepts from the top down rather than having them emerge as a result of natural interest and native curiosity.

A program must include a variety of activities. Some pupils will be doing individual research, others will be working in small groups, perhaps preparing for panel discussions or debates. Other groups will be previewing films or listening to recordings. Pupils follow out their individual interests and share findings with the class.

One common plan for organization for instruction in social studies is the unit. Space does not permit a detailed description of the unit, but much has been written on unit organization and the reader will not lack for abundant references.

A unit may be considered as a series of related teaching-learning experiences developed by pupils and teacher together, carried out over a period of time, and focused on a central topic, theme, or problem. The term "unit method" is sometimes used. This is really a misnomer since the unit is not a method but a way of organizing for learning. Many methods may be used in the course of the development of the unit. Since it does lend itself to a wide variety of procedures, the unit is an excellent means for individualizing instruction. As has been pointed out earlier pupils may engage in a number of activities. They may learn to plan together; they may work individually or in small groups; they may engage in research and use reference materials; they may interview or write letters for information; they may plan and carry out numerous projects and activities; they may share information with other class members through discussions, reports,

panels, talks, plays; they may learn to state problems on which they are working with clarity; they may learn to evaluate what they have done.

Science

What is true for reading and social studies also applies to science with additional requirements for adequate space for preparation of demonstrations and experiments. The science program comes alive in aquariums, science kits, microscopes, and experiments. Science is participation and doing. Science is observation. Science is an attitude and a method. If the only way pupils are exposed to science in the elementary school is through reading about it in a textbook, that elementary school will have ignored a fundamental law of learning that is particularly true in science- - namely, children learn and enjoy learning by doing!

Conclusion

Ever since educators have become aware that children grow at different rates and become less alike the further they progress in school, attempts have been made to learn how to treat different children differently, while enabling each to come as close to reaching his potential as possible.

The most vital and essential element in individualized instruction is the basic point of view held by the classroom teacher. Different organizational plans, availability of a variety of materials or the amount of time available to work with children may make little difference in pupil achievement if the teacher still believes in the archaic notions of fixed grade standards, single textbook approaches, and assign-study- recite methods.

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